Report:
OID-BSC Meeting, May 2-3, 2018

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Clinical Laboratory Improvement Advisory Committee (CLIAC), November 2018

OID-BSC Meeting, May 2-3, 2018 Included Reports:

- OID Update
- Update on CDC's High Containment Laboratory Initiative
- Update from the National Center for Immunization and Respiratory Diseases
- Update from the Center for Global Health (CGH)
- Update on CDC's Efforts to Address the Opioid Epidemic
- Update from the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention
- Update on CDC's Efforts to Train the Next Generation of Public Health Workers
- Report Back from the Infectious Disease Laboratory Working Group (IDLWG)
- Update from CDC Director
- Update from the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)
- Update on CDC's Activities to Reduce Antimicrobial Resistance
- Update on USDA/APHIS/VS Antimicrobial Resistance Activities

OID Update

Sonja Rasmussen, CDC Deputy Director for Infectious Diseases, and Director, OID

- Review of structure of OID
- CDC budget FY18 was increased.
- Relevant to OID: high containment lab, opiate control, global health.
- FY 19 proposed budget by White House is a $2B decrease (out of ~8B)
  - Some services transferred out; national stockpile going to other preparedness agency.
  - NIOSH to go to NIH – HHS effort to move research to use NIH infrastructure.
  - BUT real and significant cuts to programs are involved as well.
    - Unclear what the impact would be on capabilities.
- International EID conference in August

Update on CDC's High Containment Laboratory Initiative

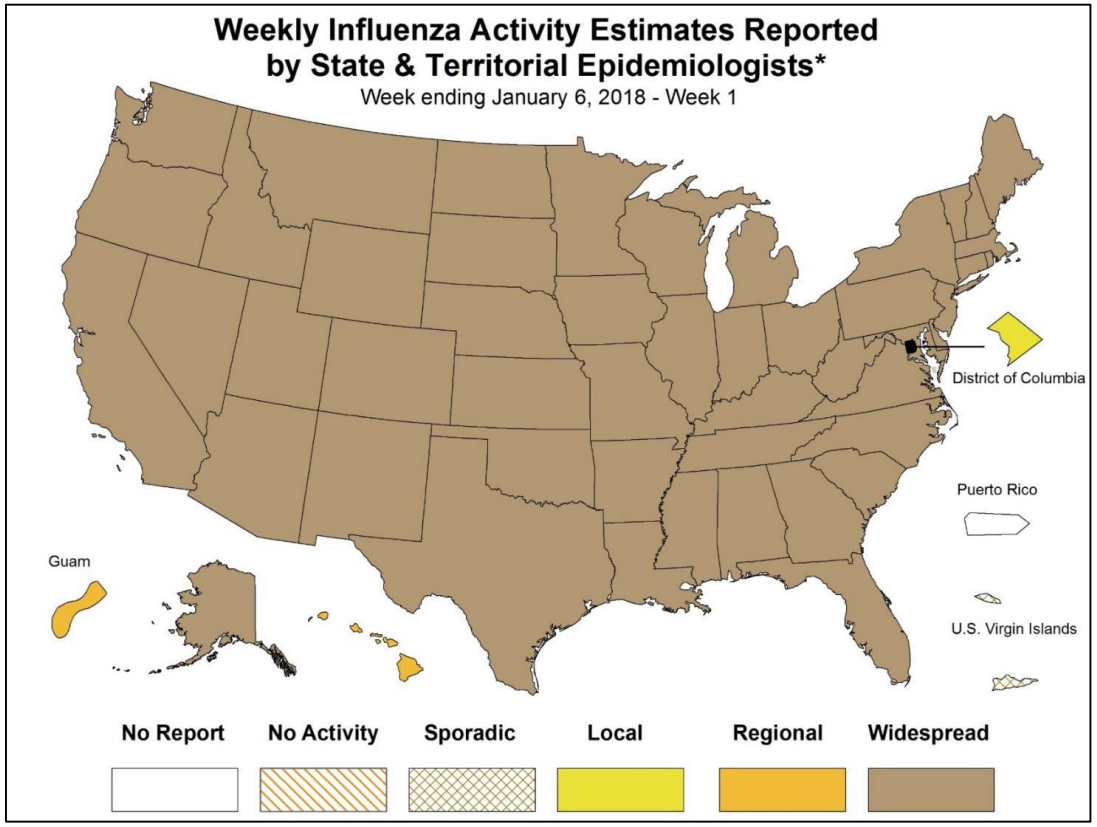
Michael Shaw, Senior Advisor for Laboratory Science, OID

- Current HCL built in 2005 BSL-4
  - Especially for outbreaks of dangerous pathogens
  - All labs but especially containment facilities have a finite lifespan; need advance planning to avoid interruption of service.
  - Study 2014
    - Interruptions to increase beginning in 2019 with expected lifespans of 2005 systems.
    - If re-commissioning is required, outages could be months-years.
    - Looked at other similar facilities; tended to be replaced around 20-25y.
    - No good alternatives to building new BSL-4 facility.
  - To build new HCCL: hundreds of millions of dollars. Given to CDC in FY'18; $480M.
    - 6 levels, 95K ft2; 3 BSL4 labs, 5 BSL3E (E for enhanced)
    - Expected to be operational 2025
  - Hope to renovate existing facility as swing space and training space for BSL4 work.
  - Discussion: design for longer life – maintenance in segments instead of as a whole.

Update from the National Center for Immunization and Respiratory Diseases

Nancy Messonnier, Director, NCIRD

- Big flu season. Highest hospitalization rate since surveillance began. Vaccine effectiveness below average, esp. for H3N2 strain – even though antigenic match was pretty good.
- **Shortages of antivirals (and diagnostic test kits).**
  - **Supply chain management for antivirals.**
  - **No specific mention of supply chain for diagnostics**



Update from the Center for Global Health (CGH)

Rebecca Martin, Director, CGH

- Global HIV/TB efforts
  - HIV
    - ARV efforts and optimizing yield on investment
    - HIV impact field surveys
    - Est. 30% of HIV worldwide is undiagnosed. Underdiagnosed in men, adolescents, and key populations
      - Index partner and family testing
    - HIV self-testing progress
      - Increases uptake and frequency of testing
      - Good concordance with professional testers
      - High acceptability and usability
    - Rapid POC 'recent Xmission' assay. Deployable avidity test.
  - TB
    - TB preventative Rx in PLHIV. Only 14% have started TB preventive Rx(!)
    - Plan to scale this up a lot in PEPFAR
- Parasitic diseases and malaria
  - Development of advanced HRP2 *falciparum* detection assay (Luminex platform) with increased sensitivity, automated, high-throughput.

Update on CDC's Efforts to Train the Next Generation of Public Health Workers

Pattie Simone, Center for Surveillance, Epidemiology, and Laboratory Services (CSELS)

- Programs at elementary, secondary, collegiate, and graduate level.
- Fellowships:
  - Funding for EIS positions declining; twice as many positions (e.g. state slots where EIS officers are wanted) as positions funded.
  - Ominous decline in physicians in EIS program. Only 33% of EISO were physicians in 2017.
  - Declining number of Epi-Aids. ? Involvement raises the PR profile of a potentially-embarrassing problem?
- **Laboratory Leadership Program**
  - **Two-year competency-based service learning program for early career laboratory scientists.**
    - **Safety and quality**
    - **Training through service, e.g. EIS model**
    - **Promote applied PH lab research**
    - **Develop leaders**
  - **6-8 fellows/year**
  - **4 CDC, 3 field sites**
    - **NCEZID, NCIRD, CGH, NHHHSTP; NYC, MN, NH states**
    - **Several responses to requests for services out of this program**
- **Fellow Teams**
  - **Denver: Economics, Informatics, Preventive medicine – attacking opioid use disorder**
- Most fellows stay in PH.
- Opportunities:
  - Integrate trainees into more programs
  - Collecting better data
  - Modernize skill sets
  - Ensure quality experiences and field supervision
  - Respond to changes in data sciences
  - Promoting multidisciplinary teams
  - Enhancing physician recruitment
  - Addressing needs of state and local PH

Report Back from the Infectious Disease Laboratory Working Group (IDLWG)

Jill Taylor, co-chair
Greg Armstrong, Director, Office of Advanced Molecular Detection, NCEZID
John Besser, Division of Foodborne, Waterborne, and Environmental Diseases, NCEZID

- AMD program
  - Years 1-3 – Development; establishing at CDC, infrastructure elsewhere, adapting for public health
  - Years 4-5 – Implementation, expansion to state and local PH departments, workforce development
- At CDC
  - Application to PH projects; Workforce; IT infrastructure; Project management; Access to cloud services; storage and computation.
- In US PH System
  - All states have >= 1 sequencer
  - Pulsenet: 51 labs in 45 states, transitioning to NGS over the next year.
  - TB: single national center in MI, with 5 other labs for support and historic isolates.
  - HCV (GHOST) 8 states
  - HIV 31 jurisdictions, 103 users
  - Legionella 6 states; Influenza 3 national centers, AMR, several pathogens, viral vaccine-preventables
  - Workforce development; regional training networks, advanced training under development; epidemiologists; bioinformaticians.
  - Regional bioinformatics resources; 7 regions, each with a bioinformatician.
- Data Science
  - SO complex.
  - NIH has a strategic plan for data science there….
- CDC AMD programs
  - Phase 1 to date
  - Phase 2 workforce development; programmatic priorities; anticipate the future of public health practice; develop data sciences expertise.
- Concerns
  - Other expertise; FDA; NIAID;
  - Interoperability concerns
  - Strategic planning and anticipating needs
  - Maintain research focus
  - How will these technologies impact laboratory organization and subject / laboratory boundaries.
- CIDT
  - The usual discussion

Update from CDC Director

Robert Redfield, Director, CDC

- Described early work on HBV in soldiers and wives in Korean era; a goal to re-engage practicing providers in public health.
- Opiate crisis. Stigma as the enemy of public health; discussion of language around substance use. 67K deaths last year; more than entire Vietnam war.
  - More discussion of consequences of opiate epidemic
- Global health security
  - Don't underestimate flu.
  - AMR. Netherlands approach to MRSA.
  - Disease elimination. 21st Century Cure Act.
    - End HIV epidemic in the US – end transmission, get patients at risk into 'comprehensive prevention programs', get infected treated.
    - HCV elimination. HBV. Tools available.
    - Global elimination programs; polio, childhood diseases as well.
- 'Meet people where they are, but bring them to where they need to be'
  - E.g. HPV vaccination in faith community; 'they should be advocates'.

Update from the National Center for Emerging and Zoonotic Infectious Diseases (NCEZID)

Rima Khabbaz, Director, NCEZID

- Recent outbreaks reviewed.
- **Lab Progress**
  - **By the end of 2018, all 50 states will do *Salmonella, Campylobacter, Shigella*, and STEC by WGS.**
  - **Sequencing-first for influenza typing.**
  - **TB typing to WGS**
  - **HCV and HIV**
  - **WGS has improved tracing for both *Campylobacter* and *Listeria*.**
- **AMR**
  - **Vital Signs on 4/3 on containment strategy for new AMR strains.**
  - **AMR Lab Network; PH labs detecting unusual resistance patterns.**
  - **Meeting on AMR in the environment and impact on human health.**
- Budget issues.
  - 2019 proposal includes a 17% cut for the Center.
- Upcoming
  - HHS Tickborne advisory group
  - PACCARB in May
  - Smithsonian exhibit 'Outbreak'

About Vital Signs

The *CDC Vital Signs* monthly report was launched in 2010. It includes a MMWR Early Release, a graphic fact sheet and website, a media release, and social media tools. Most of the materials are available in English and Spanish.

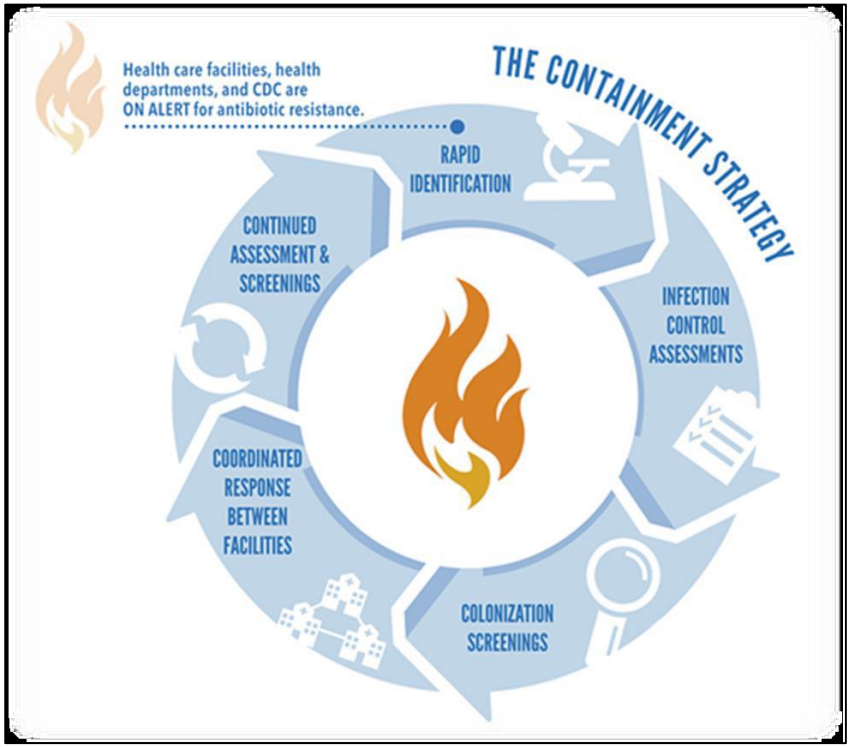
Vital Signs reports cover an important health threat and what can be done to drive down the disease. Past topics have included cancer screening, alcohol and tobacco use, HIV testing, motor vehicle safety, cardiovascular disease, healthcare-associated infections, and foodborne disease.

Please sign up to get Vital Signs through email each month at Vital Signs. Feel free to share CDC Vital Signs information broadly with your partners. Take advantage of CDC's social media tools, such as the CDC Vital Signs buttons and email updates. You can have CDC Vital Signs reports sent directly to your own website to display through our content syndication service.

Update on CDC's Activities to Reduce Antimicrobial Resistance

Michael Craig, Division of Healthcare Quality Promotion, NCEZID

- Strategies: improving Abx use and infection prevention, rapidly identifying foodborne resistant isolates, tracking in the community, international collaboration, research.
- Containment strategy – Vital Signs to contain unusual resistance patterns
  - **Rapid detection in HCF – to be limiting factor, getting isolates from labs to AMR Lab Network.**
  - Infection control assessments led by state health
  - **Colonization screenings, when needed**
  - Coordination between facilities
  - Continued vigilance until control
- Lab Network is identifying more CRE, etc.
- Project funding via Broad Agency Announcement



Update on USDA/APHIS/VS Antimicrobial Resistance Activities

Bruce Wagner, Director, Center for Epidemiology and Animal Health, USDA/APHIS/VS, Representing USDA on behalf of ex officio member Beth Lautner

- Stewardship – Surveillance (routine testing, collection of drug use and utilization on farms, coordinated investigations) – International Cooperation
- No authority for surveillance; all voluntary.
- Example of a *Salmonella* Heidelberg outbreak related to dairy calves.